

**REVISED WORKING DRAFT
OF THE
FULL COMMISSION
RECOMMENDATIONS**

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- *The Commission recommends that investment be made in corollary checklists and/or automated tools for verifying compliance with the accessibility requirements for source files.*

Recommendation 12: *Congress should develop legislation that guides the functional requirements for supplying accessible instructional materials in a cost-effective and timely manner to students with disabilities who require accessible instructional materials*

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Recommendation 14: *Congress should encourage everyone in the ecosystem at issue – including post-secondary institutions, publishers and other content providers, and manufactures of hardware and software – by offering market supply incentives (such as tax incentives), safe harbors or legal presumptions with respect to the production, sale and purchase of accessible instructional materials and devices.*

Recommendation 15: *While the pedagogical quality of instructional materials should remain the primary basis for content assignments by faculty, postsecondary institutions should be required to aggressively educate faculty, staff, students and university leadership about accessible instructional materials as a condition of receiving federal grant monies.*

Recommendation 16: *Congress should review the scope, effectiveness, and current function of the Chafee Amendment to determine whether each of its key component elements, as well as the statute taken as a whole in its regulatory approach, serves as a necessary and appropriate means for addressing the needs of postsecondary students with print disabilities, or, as publishers have argued, serves as a disincentive for serious investments in marketplace solutions by publishers and others.*

REGULATORY RECOMMENDATIONS

Recommendation 17: *The Library of Congress should consider conducting a rulemaking to review its regulations for the National Library Service for the Blind and Physically Handicapped, which interpret and implement the scope of the beneficiary population eligible for services under the Pratt-Smoot Act, with a specific focus on whether the regulations should recognize specific learning disabilities, e.g., dyslexia.*

Recommendation 18: *The Department of Education and the Department of Justice should consider reviewing, clarifying and, as appropriate, conducting a rulemaking concerning the requirements for students to obtain certifications to prove eligibility for accommodations, sometimes on a repetitive basis.*

TECHNOLOGY-RELATED RECOMMENDATIONS

Recommendation 19: *The Commission recommends that publishers facilitate the distribution of AIM by including accessibility in metadata standards.*

Recommendation 20: *The establishment of a federated search entity that enables individual students and DSS office to search a single online resource to locate pre-existing accessible sources.*

Recommendation 21: *Consideration should be given to increasing government support for the creation of braille and tactile graphics materials in postsecondary settings*

Recommendation 22: *The Commission recommends that producers of courseware management systems, Web development software, word processors, and layout programs, among others, be encouraged to create accessibility wizards and prompts that inspect materials for accessibility as they are created and before they are distributed to students.*

MODEL PROGRAMS

Recommendation 23: *The Task Force recommends that a demonstration project to a major post-secondary institution engaged in implementing a campus-wide approach to accessibility be competed*

Recommendation 24: *The Commission recommends for the Department of Education to offer a discretionary grant opportunity to fund a demonstration project for STEM faculty*

Recommendation 25: *The Task Force recommends funding a Model Demonstration Instructional Program in Tactile Graphics and Braille Development*

MARKET-BASED RECOMMENDATIONS

Recommendation 1: *Postsecondary students who have print disabilities should be able to obtain accessible instructional materials on the open market at the same time and the same cost as mainstream materials, subject to certain reasonable adjustments or exceptions for high cost and/or low incidence circumstances.*

The Commission starts from the premise that individuals who have print disabilities must have equal opportunity and discrimination-free access to participate and succeed in postsecondary education. Unfortunately, for many years, the specialized formats needed by such individuals were expensive and labor-intensive to produce (e.g., Braille versions, recorded books), meaning they were distinct from materials sold in mainstream markets. Put simply, accessible versions were generally limited to book formats and they were available only from specialized sources. Today, however, as digital distribution platforms become more advanced, it is very often the case that the format required for accessibility purposes is the same, or substantially similar to, the format distributed to mainstream markets.

The mainstream and specialized markets are, thus, converging. Commission members agree that convergence is a positive development that should be encouraged in every possible way, including through funding, investments in technology and technical standards, the development of best practices, and, as necessary, incentives and safeguards in the law. As a general rule, the Commission notes that achieving accessibility in the marketplace is the best way to ensure the greatest diversity of content reaches the greatest number of individuals with print disabilities—including, for example, individuals who are blind as well as those who have learning disabilities or physical-handicaps.

However, the Commission also recognizes that accessible works cannot always be produced through regular publishing processes. Some such works would require significant added production costs to achieve or may only serve limited markets of users—for example, Braille or tactile graphics users. In the case of these high cost and/or low incidence works, the Commission thinks it is unlikely that the open market is likely to provide a meaningful solution, even over time. It is more likely that these works will continue to require the services of specialized libraries, such as those that currently operate on a not-for-profit basis under the Chafee Amendment.

At the same time, the Commission recognizes the burdens on postsecondary institutions and, in particular, the disability support services (DSS) offices that work under great resource challenges to meet the needs of students with print disabilities. DSS offices have largely operated under the fair use copyright exception to fill the void

between what students require and what is available from authorized entities operating under the Chafee Amendment.¹

However, as technology continues to advance, and instructional materials become more media-rich, DSS offices are becoming less and less capable of providing “reasonable accommodation” under the law. In short, they lack the resources to create and distribute market-quality versions and are therefore less likely to meet the standards to which post-secondary students are entitled under disabilities laws. To be clear, the copies provided by DSS offices have been somewhat removed from market standards in the past (e.g. a scanned PDF is not the same as a book)—but the problem is worse now that marketplace works have more graphics, more potential for interactive features, and more hyperlinks, for example.

Against this evolving backdrop, the marketplace is expanding and many larger publishers are migrating to born-digital multimedia educational products and will be building accessibility directly into products to serve marketplace demands. The role of small or specialized publishers with respect to postsecondary markets is less clear. It is possible accessibility requirements will prove challenging, but it is also possible they may realize cost savings in some circumstances. Moreover, they may benefit from creative licenses with colleges and universities, including, perhaps, scenarios where DSS offices may act not as book scanners but as licensed distributors or intermediaries.

Recommendation 2: *In considering market solutions, stakeholders must consider a wide range of instructional materials including not only traditional textbooks sold in print and electronic formats, but also supplementary materials that postsecondary instructors regularly assign, such as trade books, journal articles, scholarly monographs, library reference materials, and interactive on-line materials, as well as assessments.*

The Commission is aware that beyond the first two years of postsecondary instruction, textbooks are often not the primary source of instructional materials. Many advanced undergraduate courses and most graduate courses rely on a mix of journal

¹ The scope of authority under which DSS offices operate has been a matter of debate among some Commission members. Some believe that DSS offices qualify as “authorized entities” under the Chafee Amendment whereas others believe that a typical DSS office falls outside the scope of Chafee and must operate within the limited and uncertain confines of the fair use provision of the Copyright Act. See 17 U.S.C. § 107 (providing that “[i]n determining whether the use made of a work in a particular case is a fair use the factors to be considered shall include – (1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes; (2) the nature of the copyrighted work; (3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and (4) the effect of the use upon the potential market for or value of the copyrighted work.”).

articles, monographs, and other printed as well as interactive materials. Moreover, instructional materials are increasingly delivered to students via online course management systems that must likewise be accessible in order to effectively deliver content to all students.

Thus, Commission members believe strongly that accessibility solutions must look beyond traditional textbooks and consider the wide range of materials, and the delivery platforms on which they are supplied to students. A market approach, as opposed to reliance on exceptions and limitations (such as the Chafee Amendment or fair use), offers more freedom to develop rich materials and expand the range of accessible materials available to students. In part this is because the exception supplied by the Chafee Amendment applies only to the reproduction and distribution right in previously published, nondramatic literary works; it does not allow for the creation of complex audiovisual components or other media rich instructional materials, many of which, as a practical matter, are beyond the production and cost restrictions of specialized libraries anyway.

In light of these facts, the Commission notes that while exceptions in the law play an important role in achieving accessibility, the fast-changing, media rich nature of instructional materials makes it preferable to achieve accessibility at the outset whenever possible. And the Commission underscores that accessibility must be a shared goal of all rights holders who provide content in the postsecondary space. Focusing only on textbook publishers would not go far enough in meeting the needs of 21st century students.

Recommendation 3: *With respect to non-digital print materials, rights holders, universities and intermediaries should explore whether innovative voluntary collective licensing models would allow for timely production, distribution and/or exchange of instructional materials in circumstances where the relevant rights holders do not have all necessary rights or sufficient systems in place for direct licensing of such rights.*

Certain copyright industries already benefit from the existence of voluntary collective licensing frameworks, which continue to develop for the purpose of licensing the reproduction, distribution, public performance and public display of works of authorship, including those produced and/or accessed in digital forms. Collective licensing models, as described above, operate on an optional or “opt-in” basis on the part of rights holders, who sign up to participate and authorize a collective rights organization to grant licenses to their works as part of its collective offerings.

For example, many publishers have contracted with the Copyright Clearance Center (CCC), an organization that began by licensing photocopies but now administers

more complex transactions. This model allows regular users of certain copyrighted content such as book chapters, journal articles, and other printed materials to obtain a “blanket license” to use content in the CCC repertory on an as-needed basis for a flat fee paid to CCC which, in turn, allocates royalties to rights holders based on a pre-determined formula. Similar models exist in the music industry, where several performance rights organizations – ASCAP, BMI, and SESAC – exist to handle licensing and royalty payments to owners of musical compositions.²

From Technology TF: *The Commission recognizes that licensing agreements will be addressed by contractual arrangements between publishers and their licensees, or the parties with which the publishers enter into agreements for conversion or other services. Issues may, for example, include who will bear the cost of creating the accessible work, who will bear the cost of marketing it, who will handle the sales and fulfillment (distribution) of the work, and how revenues will be allocated. The determination of the feasibility of a licensing arrangement will be made on a case-by-case basis between the parties.*

Possible Projects between Rights Holders and Universities

In the context of accessibility and higher education, collective licensing could take several forms. For example, it might allow a university to negotiate a blanket license with a designated collective organization, which could be CCC or could be an existing organization experienced in serving the print-disabled populations. Such a license might allow the university to convert non-digital, legacy materials, or digital materials that are not student-ready, on an as-needed basis. Or, the license could authorize an entity like Learning Ally (formerly known as Recording for the Blind and Dyslexic), Bookshare or the National Library Service for the Blind & Physically Handicapped to create and deliver the necessary works. This framework would eliminate the laborious and costly process of identifying and contacting rights holders individually, on a case-by-case basis. Instead, it would allow institutions to deal with one party that would be able to license rights for a variety of regularly used materials, often in advance through a single blanket agreement.

However, the Commission recognizes that, in many instances, the rights holder may not have the rights to authorize digital reproduction and distribution of an entire work without first obtaining permission from third-party rights holders – for example, for

² The Commission recognizes that two of these organizations – ASCAP and BMI – operate under consent decrees with the Department of Justice which arose out of allegations of anticompetitive conduct relating to the way each of these organizations set prices for their blanket licenses. We note, however, that although the price-setting mechanisms at issue in ASCAP and BMI gave rise to antitrust liability, courts have recognized the value of blanket licensing. *See, e.g., Broadcast Music, Inc. v. Columbia Broadcasting System, Inc.*, 441 U.S. 1, 20 (1979). The Commission thus believes that a collective management scheme for accessibility purposes could be crafted without raising antitrust concerns.

the use of prefatory text, photographs or other component parts used by the publishers under agreements from other publishers, producers, historical societies, authors or photographers. Such works will necessarily require special treatment under a collective rights arrangement.

Possible Sanctioned Exchange of Materials between Universities

Beyond licensing the underlying rights necessary to create accessible materials, appropriately licensed postsecondary institutions should have some mechanism by which to exchange accessible content pursuant to voluntarily provided licenses from publishers. If one institution has already undertaken to create an accessible version, other institutions that require the same title should not be required to invest in the time and effort to create a new accessible copy – at least when the effort is more than simple. The extensive catalogs of accessible content that some organizations already have in place are an excellent start. Further to this point, the Commission notes that the development of a federated search mechanism (see recommendation of Technology Taskforce) could facilitate searches across multiple databases, reducing duplication of titles and saving time and money for resource-strapped organizations, while also providing rights holders with usage data that could help build market incentives and determine appropriate market responses for any such content that appears to be widely used.

From Technology TF: *The Commission recommends that sharing of accessibility-enhanced instructional material files be permitted directly among and between organizations producing these accessible materials – including existing and future authorized entities and institutions of postsecondary education—so long as such sharing complies with all laws, regulations, and requirements, then in place, to protect all rights of the copyright holders.*

Possible Pilot Projects with Specialized Libraries or other Intermediaries

While Commission members agree that a collective licensing model would be a welcome development, some expressed reservations about the effectiveness of such a scheme if not tied to a trusted file delivery mechanism. For this reason, the Commission believes that the development of a model collective licensing scheme would be ideal for a pilot project to demonstrate the effectiveness of the approach.³

³ For example, a project might harness several major publishers to achieve a “critical mass” of licensable content; use an existing collective licensing agent such as CCC to allow the project to leverage existing structure, technology, and content licensing relationships; and engage an existing authorized entity to catalog, if not convert and deliver, the electronic files. Ideally, the pilot would last for at least 18 months, once established, and participation would be on an application basis, with a well-represented cross section of institutions (e.g., two- and four-year schools; various sizes). If successful, the pilot would prove the viability of the collective licensing concept in the accessibility arena, perhaps encouraging new players to enter the space, leading to increased innovation and reduced prices as a result of competition.

From Market TF: *The Commission believes that a pilot project could assist in the development of standard agreements that could be the basis of future voluntary licensing agreements, particularly with smaller publishers/producers who have limited financial and legal resources. We also want to recommend that the outcomes of the licensing pilot be analyzed to determine whether the market has met the need for accessible materials. In some instances, voluntary licensing could facilitate the creation of an accessible version used in educational settings.*

Recommendation 4: *Digital rights management (“DRM”) technologies employed by some publishers should not be an impediment to accessibility. Device manufacturers and producers of software applications should work with publishers and their DRM suppliers to ensure that accessible versions are made available without harming publishers’ established and emerging distribution channels.*

Publishers and other rights holders legitimately use digital rights management techniques to ensure that their copyrighted content is distributed and exploited lawfully, and such technology can also be used to provide permissions and rights information, including licensing terms. Piracy is a major threat to the content industry and can cost the United States economy billions of dollars in any given year.

Unfortunately, DRM is sometimes an impediment to accessibility because the devices used by students with print disabilities are not able to interpret the content that is protected by the DRM. Put differently, even if a student with a print disability lawfully acquires a copy of an accessible work, DRM may inhibit the use of that work on certain devices or may inhibit certain features (e.g., text-to-speech) that are required by students with print disabilities.

Commission members representing publishers note that DRM is essential because DRM-free versions of their works—even those supplied for the purpose of advancing accessibility—could undermine the commercial market for the same title if distributed beyond the students that require the DRM-free version. As markets continue to develop and formats continue to converge (see Recommendation 1) the Commission observes that the rationale for DRM applications with respect to certain versions of publishers’ works may become more apparent. For example, carefully applied DRM techniques will also continue to serve the beneficial function of conveniently providing metadata and licensing information to potential customers and facilitating customer management relationships between publishers and end users where such relationships are ongoing with respect to the use of certain online and other accessible formats.

To ensure that mainstream commercial versions are compatible with adaptive technology used to facilitate accessibility, the Commission encourages device manufacturers, software applications producers, and publishers to coordinate and cooperate on ensuring that DRM will not serve as an impediment to accessibility endeavors. The Commission further believes that facilitating such cooperation may be an appropriate function of a standard setting organization as described in Recommendation 3.

Recommendation 5: *If the marketplace fails to achieve accessible formats for post-secondary students with print disabilities, Congress should step in and consider all necessary and appropriate measures, including new statutory protections and market regulation.*

Comment: *On the last call, the Commission discussed compromise language regarding the recommendation proposed in Ohio, namely that Congress should establish that after a certain date publishers and distributors who offer content in a digital format must offer those materials in a fully accessible format as a matter of law. The current draft embodies this possible compromise. The alternative, as previously discussed, may be to insert the original proposal but to include all arguments to the contrary.*

The other components of the original proposal are as follows:

- 1. Define instructional materials as both the content (books, journals, and testing content) as well as the interface, software and applications related to manipulation and annotation of the content as well as any other instructional software and applications used to facilitate instruction.*
- 2. Explicitly state that in cases like open educational software (where there may be no identifiable publisher or distributor) this statute does not derogate or affect the legal responsibility of post-secondary educational institutions not to deploy software or hardware that is inaccessible to persons with disabilities.*

Congress should monitor the digital marketplace over time to assess the degree to which there is improvement in the availability of accessible instructional materials for postsecondary students with print disabilities. To the extent there is market failure (i.e., a demonstrated demand sufficient to sustain publishing initiatives on a national level cannot be served efficiently by established market participants or new market entrants), Congress should review all of the relevant and applicable laws to ensure that they provide the incentives, means and appropriate mandates necessary to achieve success. If additional measures are needed, they might include adopting compulsory licenses under copyright law and enacting new statutory protections for students with respect to materials or devices.

Comment: *There is a comment that this section unduly focuses on books. Recommendations as to how to broaden it to include systems and such are appreciated.*

There is a comment questioning the use of the phrase “digital marketplace,” and whether it includes, e.g. Google Apps for Education, which are inaccessible.

The Commission is aware that compulsory or statutory copyright regimes are typically appropriate only where there is clear evidence of market failure. At this time, the digital book market is not in failure—it is in its infancy and undergoing rapid and widespread change. Despite the challenges with rights management, technological evolution has spurred more digital content, new distribution mechanisms for digital content, and new electronic reading devices, such as Amazon.com’s Kindle® and Apple’s iPad®. Electronic books are now a rapidly growing market segment in the broader economy. According to the Association of American Publishers, electronic book sales reached \$441.3 million in 2010, up approximately 164% over 2009 sales figures.⁴

Moreover, there appears to be a trend towards standardization in formats for digital content, allowing certain content to be used across multiple devices, including, perhaps, adaptive technologies. For example, the EPUB® 3 technical specifications for electronic books, which has been promulgated but not yet formally adopted as a standard, incorporates standards for accessible books set forth by the Digital Accessible Information System (DAISY) Consortium. (See findings of Market Model Task Force.) Moreover, the conclusion as to whether a market (or a submarket) has failed is a complex undertaking that is properly the purview of Congress and experts it may choose to consult.

One solution Congress may want to consider in the event it finds market failure is a compulsory licensing regime. Compulsory licenses are a limitation on the exclusive rights of authors, publishers and other copyright owners but are enacted to ensure the facilitation of markets that otherwise cannot function effectively, e.g. licensing of certain satellite and cable television markets operate this way. Compulsory licenses are different from exceptions like the Chafee Amendment because rights holders receive payment; however, rates and terms are established by law, rather than through private negotiation.

One alternative to a traditional compulsory licensing model is extended collective licensing (ECL). ECL is a copyright management scheme in which an organization represents owners of particular types of works (e.g., literary or musical works) and enters into license agreements with third parties for the use of the owners’ protected works. By operation of law, these agreements extend to all copyright owners of specified types of works, even those owners who are not members of the organization. Once legislated, this is a mandatory form of licensing, but copyright owners must agree to it: they have the ability to opt out and the right to negotiate market rates. ECL has been suggested of late as a possible mechanism for other complex transactions that are too much of an imposition on the rights or future markets of rights holders to warrant an outright

exception under the law, including, for example, mass digitization efforts by libraries and archives.

Some members of the Commission have also considered possible solutions outside the scope of copyright law. For example, some believe that, in the event of market failure, Congress may need to step in and regulate the market by creating new, specific protections for postsecondary students with print disabilities, including, for example, the right to demand accessible formats, technologies and/or devices from those who produce them. These are issues that should be revisited by Congress in the event that a market fails to develop for accessible digital materials and products.

BEST PRACTICES RECOMMENDATIONS

Recommendation 6: *IHEs must develop efficient and sufficient capacity to locate, create or otherwise acquire high-quality alternate format materials*

Materials accessible to and appropriate for student learning vary depending on three factors: the time it takes to acquire and deliver the material; the student's preferred format(s); and the nature of the materials themselves. IHEs - and their agencies responsible for these accommodations; most often DSS Offices - need to develop and document efficient protocols and procedures for materials acquisition or transformation. In order to achieve the level of efficiency required, training, technical assistance and a shared awareness of best practices is necessary.

The responsibility for providing academics- related accessible instructional materials extends well beyond the purview of DSS offices, however. Library materials and services that are used for instruction and course-required readings and research, including, but not limited to course reserves, online library catalogs (OPACs), information services and databases must be accessible to all students. In order to achieve this, IHEs must increase the awareness of all staff and departments associated with the selection of academic resources to ensure that these assets are either available in accessible formats or compatible with common access technologies such as screen readers. Similarly, all materials delivery systems, including courseware, learning management systems, assessment systems and other commonly-implemented institution communications must also be available and offer equitable access to all students. For these reasons it is crucial that IHEs establish a systemic approach to accessibility.

In addition, vendors that provide educational, course management, administrative software, or information services (LexisNexis, ProQuest, Blackboard, Banner, PeopleSoft, etc.) must be required to provide training modules for all students to learn to use these systems for accessing materials.

Recommendation 7: *The Commission recommends additional training by experts in the higher education community for the production and delivery of consistent quality materials*

<p>Comment: <i>This recommendation needs to be restructured. One possibility –divide between federally related recommendations and more general recommendations such as having AHEAD provide more training.</i></p>
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Unlike the K-12 arena, there is no national requirement for the development and delivery of Accessible Instructional Materials (AIM), but by leveraging existing training and development efforts, both at a national and state level, a unique opportunity exists to

build and expand on the training efforts that have been developed by the Association of Higher Education and Disability's Instructional Materials Accessibility Group. For example By utilizing the existing content of these workshops, such as Introduction to AIM, Advanced AIM production, and Selected Topics in AIM production, a comprehensive profession development program could be developed that would provide participants with a well-grounded education and hands-on experiences into the challenges related to providing accessible materials in higher education.

Recommendation 8: *Departments and/or faculty identify and make public necessary course materials (or according to Sec 133 of HEOA of 2008?) as soon as possible.*

Based on a review of multiple surveys and research literature, the Commission recognized that timely identification of course materials is an important variable in the acquisition or creation and distribution of accessible, alternate format versions. First, students and the offices responsible for acquiring specialized formats at institutions of higher education (IHEs)—usually the DSS Offices—need to be informed of the specific required course materials in timeframe sufficient to allow for their acquisition. This Commission strongly supports Section 133 (d) of the Higher Education Opportunity Act of 2008 which requires the identification of these materials at the time of course registration. Adherence to this requirement would accelerate the identification of inaccessible materials and the acquisition of appropriate formats that could be delivered to the student in a timely manner.

To ensure the timely notification of required course materials, the Commission supports the removal of subsection (i) of Section 133 of the Higher Education Act:

"(i) No Regulatory Authority.--The Secretary shall not promulgate regulations with respect to this section."

To allow the Secretary to require an assurance from each IHE that active steps have been taken to comply with the Section 133 (d) provisions. The Task Force recommends that postsecondary institutions be required to document compliance with the intent of Section 133 as a condition to participating in the Title IV program.

<p>Comment: <i>The Commission might want to suggest amendment of this provision to allow OPE to conduct rulemaking and stronger enforcement. Recommendation might be to strike subsection 133 (i) that prohibits federal regulations on this section.</i></p>
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Recommendation 9: *Students communicate requests to DSS offices as soon as possible upon identification of necessary course materials.*

Even when faculty announces class material in a timely manner, students might also switch classes or sign up for the class late. Students need to be encouraged to inform the DSS office of their course enrollment as soon as possible. If DSS providers are allotted months, rather than weeks or, in some cases, days, these materials can be provided in a timely manner. Timely notification from both instructors and students is essential since, for a variety of complex reasons, very few of these materials are maintained in an accessible format.

The Commission recommends that as soon as students are notified of the materials that will be used in the course, they inform the DSS office. This will ensure that the DSS office will have enough time to acquire or create the necessary accommodations.

Recommendation 10: *The Commission recommends that when posted to Web sites, included in courseware management systems, or as part of electronic documents, STEM materials containing equations and/or scientific notation be made to students with disabilities in an accessible form (images of equations alone will not suffice), such as MathML.*

Electronic copies of books from publishers should also include text-based equations in formats such as MathML (preferred) or LaTeX.

Comment: <i>This recommendation will require further explanation</i>

LEGISLATIVE RECOMMENDATIONS

Recommendation 11: *With respect to digital materials, Congress should facilitate the creation and/or adoption of specific, voluntary performance criteria and technical standards, possibly developed by a standards board comprised of key members of the ecosystem.*

Comment: *There have been two suggestions to delete the word “voluntary.” However this recommendation was discussed on the Commission’s phone call in the context of voluntary actions developed by good faith actors working together. It therefore requires further discussion.*

In order to ensure that the transition to widespread digital distribution continues to develop in a way that fosters accessibility objectives, many Commission members believe that a standards board or standards-setting organization may be necessary to ensure that content suppliers and device manufacturers have clear guidance on accessibility requirements and market expectations. Many Commission members agreed that the United States Access Board would be well suited to take on such a role; the Access Board currently promulgates the accessibility standards as set forth in a variety of federal statutes and regulations, and is well versed in the fact-finding and monitoring activities required of such a standards-setting organization.

From Market TF: *Such a Board could: set minimal requirements for accessibility, review, update, and create accessibility guidelines, create a certification of materials as accessible, and encourage the development of authoring tools that create accessible products. Several Commission members suggested that this board would not only set standards for files, but would consider accessibility along the entire distribution chain.*

The task force does not have a final recommendation about the best manner to establish the standards board as quickly as possible. Some members believe that the standards board could best function as a voluntary body. Others believe that Congress should convene this entity. In the case that Congress convenes this group, several members believe that the authorizing legislation should contain provisions providing for a follow up on the status of the market after a certain number of years.

Congress should establish the ability for publishers, systems manufacturers and other important members of the ecosystem to work with the Access Board to include

standards that are needed to address content types that are specific to education, for example, W3 standards, the inclusion of page numbers and structure information in eBooks. Publishers should prepare detailed Voluntary Product Accessibility Templates® (VPATs®), in plain language, in instances where an institution requests confirmation from the publisher that a product the publisher is offering conforms to various legal standards (e.g., Section 508). VPAT exemplars and documentation should be made publicly available on the Internet to support both the creation and interpretation of VPATs.

From Technology TF: *Functional requirements, set forth below, which facilitate the creation of accessible instructional materials when properly adhered to, must be developed, implemented and regularly reviewed by the standards board comprised of key players and stakeholders.*

The Commission recommends that, rather than adopting a specific file format, that the criteria described below for creating accessible documents and documents that can be easily transformed into other formats, such as Braille, DAISY, and other student-requested accessible formats, should be implemented. These document characteristics should, at a minimum, include the provision of the following:

- *Text must be supplied for text contained in an image;*
- *Major heading structures;*
- *Page breaks;*
- *Page numbers;*
- *Properly structured information presented in table format*
- *Brief descriptive text for images, charts, and graphs;*
- *MathML for mathematical content, and*
- *A logical reading order.*

In line with the functional requirements, the Commission does not recommend that these characteristics apply to documents that did not contain this structure originally - if there are no headings, page breaks or page numbers in the original document, they are not required for the accessible version.

Source files with these characteristics can be repurposed to various formats, including student-ready materials that can be utilized with the most commonly available assistive technologies; understanding that complex, post-source file

markup may be required for the production of more specialized student-ready files depending on end format requirements.

The Commission recommends that investment be made in corollary checklists and/or automated tools for verifying compliance with the accessibility requirements for source files.

Although manual testing may still be necessary in certain situations, automated tools and checklists have been proven to increase accessibility features of documents, websites, and other instructional materials. However, it should be recognized that automated tools, while tremendously helpful, are by themselves insufficient to determine the conformance of products, websites, etc. to accessibility standards or guidelines. The Commission needs to understand that manual testing is an essential component of verifying conformance and manual testing creates a non-trivial cost element that must be factored in if regulations are to be recommended that require prospective accessibility verification of all products entering the market.

Recommendation 12: ***Congress should develop legislation that guides the functional requirements for supplying accessible instructional materials in a cost-effective and timely manner to students with disabilities who require accessible instructional materials***

As mentioned throughout the report, students with disabilities often have difficulty obtaining accessible instructional materials in a timely and cost effective manner. Therefore, to address this issue, the Commission recommends for the development and implementation of legislation that mandates that instructional materials be supplied to students in formats that permit a user with a print disability the opportunity to acquire the same information, engage in the same transactions and enjoy the same services at the same time as the student without a disability, and with a substantially equivalent ease of use.

Comment: *Is this a stand-alone recommendation? What's to ask here? Is this building on the Columbus recommendation that sets a date certain/stake in the ground for accessibility? We should either expand – how to we propose to accomplish goal – or fold into item 1?*

Recommendation 13: *Consideration should be given to legislation that assures the availability of properly structured digital files of legacy print materials to enhance the speed and cost-effectiveness of producing AIM*

<p>Comment: <i>Should the 1st paragraph of this recommendation be folded into another recommendation?</i></p>
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The availability of well-structured digital files that delineate chapters, sections, sub-sections, page numbers, indexes, and glossaries, i.e., all the components that provide structure to a text-based document, significantly accelerates the creation of braille. Similarly, the availability of certain image-file formats can speed the creation of tactile graphics. The 2011 publication, *Accessible Publishing, Best Practice Guidelines for Publishers* from The World Intellectual Property Organization (WIPO), EdiTeur and the DAISY Consortium, with the support of the International Publishers Association, strongly recommends that publishers adhere to structured digital file creation as the foundation of their product development. The Commission recommends that publishers follow these guidelines. The Commission believes that if the guidelines are followed, a more unified process for making these files available for the creation of braille and tactile graphics would be established, and these materials could be produced more rapidly and at lower cost.

The Commission force is not unified regarding the recommendation for a legislative requirement for the provision of structured digital files with dissenting opinions noting that both a NIMAS-type source file approach and a centralized repository for these files has been unanimously rejected by the Commission previously. The Commission is in agreement that voluntary compliance with a set of clearly-defined and unambiguous document format guidelines would benefit all stakeholders.

Recommendation 14: *Congress should encourage everyone in the ecosystem at issue – including post-secondary institutions, publishers and other content providers, and manufactures of hardware and softwar—by offering market supply incentives (such as tax incentives), safe harbors or legal presumptions with respect to the production, sale and purchase of accessible instructional materials and devices.*

Some Commission members believe that both publishers and postsecondary institutions could benefit from a scheme focused on market rewards and/or reduced liability. For example, if universities (and their faculty) limited instructional materials to

those that are certified as compliant (per a standard-setting organization like that discussed in Recommendation 5) could they be presumed to be operating in compliance with best practices, if not the statutory requirements set forth by the ADA and Section 504, or—at the very least—receive the benefit of a rebuttable presumption under the law? A system like this could, in turn, drive the market, because publishers and other content providers would seek to include the necessary product features without fear of competition from less conscientious competitors. Content, hardware, and software certified as meeting accessibility standards, such as Section 508 and WCAG 2.0, would flourish and competition among such products would lead to increased innovation and downward price pressure.

While recognizing the value in creating market incentives for publishers to create accessible content, a few members of the Commission expressed concern that establishing a safe harbor or presumption of compliance with the ADA and Section 504 for universities would make requests for accommodation and challenges to an institution's suggested accommodation more difficult, arguably affecting a student's civil rights. Specifically, the development of such a safe harbor or presumption effectively creates an additional hurdle that students must overcome in order to enforce their rights to reasonable accommodation.

Comment: *There is one very strong reaction to this and it is suggested that the Commission revisit whether to include the notion of a rebuttable presumption at all, even with the pros and cons cited, as they are here.*

At the same time, publishers note that certain complex products should not be viewed with skepticism in the marketplace when they fall short of being 100% accessible (i.e., because of the attributes of a limited number of components or features of the product) but nonetheless achieve outstanding results. As recent guidance from the Department of Education⁵ emphasizes, alternatively formatted versions, including of components of materials, can be provided by the instructor or the DSS office to provide students with disabilities with the same opportunities and benefits in an equally effective and equally integrated manner. Moreover, the publishers note that publishers are quite willing, and uniquely situated, to serve as a vital resource for universities in terms of identifying and developing these accommodations, because having developed the products the publishers understand the tools contained in them and what the products were designed to do.

Comment: *The section above represents strong views from rights holders and corrections from the Ed. However, there is one comment suggesting this is an inaccurate representation (taken out of context) of what Ed guidance actually says.*

⁵ Dear Colleague Letters, <http://www2.ed.gov/about/offices/list/ocr/letters/colleague-201105-ese.html> and <http://www2.ed.gov/about/offices/list/ocr/letters/colleague-201105-pse.html>; Frequently Asked Questions About the June 29, 2010 Dear Colleague Letter, <http://www2.ed.gov/about/offices/list/ocr/docs/dcl-ebook-faq-201105.html>.

From Market TF:

Congress should provide incentives to IHEs and faculty to adopt AIM

The Commission acknowledges the importance of the June 29, 2010 joint letter issued by the Department's Office for Civil Rights and the Department of Justice. The Commission supports the joint letter's request that institutions "refrains from requiring the use of any electronic book reader, or other similar technology, in a teaching or classroom environment as long as the device remains inaccessible to individuals who are blind or have low vision." As such, the Commission urges higher education institutions, consistent with the requirements of the ADA and 504, to purchase authoring tools that produce accessible digital publications.

While the Dear Colleague letter expressed the position of DOJ and ED that it is impermissible under federal law for colleges and universities to use electronic book readers in classroom settings that are not accessible to students who are blind or have low vision, unless those students are provided an equally effective accommodation or reasonable modification, the ADA and 504 do not provide any direct incentives to an institution of higher education receiving federal funds to purchase accessible materials. The Commission recommends that support be provided to IHEs and professors for meeting accessibility expectations.

Recommendation 15: *While the pedagogical quality of instructional materials should remain the primary basis for content assignments by faculty, postsecondary institutions should be required to aggressively educate faculty, staff, students and university leadership about accessible instructional materials as a condition of receiving federal grant monies.*

Comment: *Dept of Ed has raised some questions about real-life application and definitional issues regarding the phrase “federal grant monies.” Query whether this level of detail needs to be decided by the Commission. Ed also raised possible redundancy in the law and one other comment noted that accessibility is already required. However, the goal of this recommendation is not to repeat standards in existing law, but to proactively educate their communities by building in on-going accessibility education for faculty. The certification is tied to putting educational programs or trainings in place —not the accessibility itself. Query whether more clarity is needed, as written.*

Post-secondary institutions are a major player in the ecosystem that is the Commission’s focus and they should have clear mandates for educating their faculty, staff, students and leaders about accessibility laws, standards and practices. Requiring postsecondary institutions to certify that they have educational programs in place (e.g., on-line courses to be completed by professors each year) should be linked to the release of certain federal monies. Congress should consider the best means by which to ensure such a requirement.

Some Commission members, particularly those who represent postsecondary institutions, caution against creating a regime that requires instructors to select certain materials over others, citing concerns over academic freedom. However, it appears possible that, in many instances, postsecondary instructors are simply unaware of the issues surrounding accessibility. Moreover, while academic freedom is important, it is not a reason to avoid accessibility goals or obligations. The Commission believes that postsecondary institutions should have an affirmative obligation to educate their faculty, staff, students and university leadership as to the adoption of accessible materials. The methods by which education is achieved need not be burdensome (indeed, as suggested above, they could even be automated). In any event, the requirement must be paired with real consequences.

From Market TF: *The Commission strongly recommends the development of training for various stakeholder groups in regards to accessibility related issues. The Higher Education Opportunity Act established several training programs but they have yet to be fully funded. The Commission urges full funding of these*

programs in order to assist the higher education community by providing more information and training about best practices in providing and creating AIM. Often, accessible materials are not used because of a lack of understanding by faculty and staff as to what constitutes AIM and it is the Commission's hope that increased training with help with that providing AIM to students with disabilities in a more timely and cost-effective manner.

Comment: *Is this where STEM issuers are mentioned? —Cite current HEOA programs. Ask that they be fully funded?*

Recommendation 16: *Congress should review the scope, effectiveness, and current function of the Chafee Amendment to determine whether each of its key component elements, as well as the statute taken as a whole in its regulatory approach, serves as a necessary and appropriate means for addressing the needs of postsecondary students with print disabilities, or, as publishers have argued, serves as a disincentive for serious investments in marketplace solutions by publishers and others.*

The Chafee Amendment functions as a “safety net” in those circumstances where the market fails to (or is unlikely to) achieve the desired results. That is, in those cases where content owners are not supplying materials in accessible formats on the open market, the copyright exception in Chafee provides a mechanism by which third parties (defined by statute) may create accessible versions subject to certain provisions discussed elsewhere in this report. The Chafee Amendment was passed in 1996 after substantial negotiation and discussion with relevant stakeholders, including publishers, educators and representatives of persons who are blind [and dyslexic]; it was deliberately drafted to be narrow, ensuring that it would benefit the population that Congress intended to reach without affecting the publishers’ commercial markets. This approach was consistent with the general blueprint for adopting exceptions to the exclusive rights of copyright owners and with the international copyright treaties to which the United States is a party.

Comment: *There is a suggestion to add this term on grounds that RFB & D was at the negotiating table representing persons who have dyslexia. Since comment was not made by RFB & D, it requires a quick factual check as to legislative history.*

Much has changed since 1996. The market for electronic books and other instructional materials and the use of the Internet as a distribution mechanism have both grown dramatically and continue to develop at a rapid pace. Moreover, significant

research on the nature and origins of various print disabilities has expanded the general understanding of how such conditions manifest themselves leading to new perspectives on who may require accommodation and who is qualified to make such assessments.

Among the specific issues Congress could consider in any review of the Chafee Amendment are the circumstances in which a copyright exception for persons with print disabilities is most needed and justified; for which materials and for which populations it should be applicable; the current scientific understanding of print disabilities; the current criteria and roles for “authorized entities;” the nature of “specialized formats,” both when the statutory definition was enacted and in today’s market; and the current role and qualifications for competent authorities to certify an individual’s eligibility to be a beneficiary user under the statutory terms of the Chafee Amendment.

REGULATORY RECOMMENDATIONS

Recommendation 17: *The Library of Congress should consider conducting a rulemaking to review its regulations for the National Library Service for the Blind and Physically Handicapped, which interpret and implement the scope of the beneficiary population eligible for services under the Pratt-Smoot Act, with a specific focus on whether the regulations should recognize specific learning disabilities, e.g., dyslexia.*

Comment: *This recommendation was proposed specifically by a Commission member focused on addressing dyslexia and was addressed extensively on the Commission's conference call last week with mixed support and opposition from multiple people. At this point, the suggestion of some is to delete the recommendation altogether based on the reasons cited in the discussion here. The other suggestion, also included in the discussion, is to expand it to put dyslexia in the context of a broader spectrum of learning disabilities. For now, the recommendation remains in place and new, proposed concepts regarding learning disabilities have been inserted, until the Commission can revisit.*

Library of Congress regulation 36 C.F.R. § 701.6 establish eligibility for the National Library Service for the Blind and Physically Handicapped, as required under the Pratt-Smoot Act of 1931 (aka “Act to provide books for the adult blind”). The regulations were originally published in 1974 and are narrowly tailored. They implement the 1966 Amendments to Pratt-Smoot, i.e., the provisions that authorize the Library to loan books “to blind and to other *physically* handicapped readers certified by competent authority as unable to read normal printed material as a result of *physical limitations*, under regulations prescribed by the Librarian of Congress for this service.”

Comment: *There is strong disagreement among Commission members on this recommendation.*

The regulation specifies four categories of disabilities that determine eligibility, the fourth of which is that the beneficiary have a “reading disability resulting from organic dysfunction” that must be certified by a medical doctor. Organic dysfunction refers to a disability with a physical basis in the central nervous system. www.loc.gov/nls/reference/factsheets/readingdisabilities.html. Unfortunately, this regulatory text has led to confusion as to the general applicability of the Chafee Amendment, adopted many years after Pratt-Smoot, and the general availability of other services for individuals with specific learning disabilities—for example, dyslexia.

The other major authorized entities – Learning Ally and Bookshare – include people with certain learning disabilities in their services regardless of whether they receive MD certification under an “organic dysfunction” analysis. That is, they interpret disabilities such as dyslexia as physical disabilities and allow the broad group of professionals qualifying as a “competent authority” for other categories of eligible beneficiaries to certify the disability. This divergence of standards has led to great confusion and anxiety among those who provide services, not to mention for students and parents of students who must pay for medical evaluations and who frequently are subject to competing standards of care depending upon their level of education (e.g., K-12 or post-secondary) and/or the services they seek. (See Recommendation 11.)

Some Commission members would therefore urge the Library of Congress to review 36 C.F.R. § 701.6 in order to assess the organic dysfunction requirement and whether it would be proper to add dyslexia, for example, to the list of conditions that may be diagnosed by professionals other than doctors of medicine – in other words, to consider updating the regulations to reflect modern science as well as the existing practices of Learning Ally and Bookshare. Others suggest that merely adding dyslexia to the list would not go far enough and, indeed, might further disadvantage other learning disabilities. They believe “physical limitations” should also be read to include “a reading disability of sufficient severity to prevent the reading of printed material in a normal manner.” They suggest that revising the regulations in this manner would not result in a mass expansion of the beneficiary class under Chafee, because the definition would not include all students with learning disabilities—it would still require that the reading disability be of sufficient severity to prevent the reading of printed material in a normal manner.

Other Commission members, particularly those representing publishers, strongly oppose this recommendation. They are concerned that it is inappropriate and prejudicial because questions concerning the implementation of the Pratt-Smoot Act is referenced in the statutory text of the Chafee Amendment and therefore should be more properly and fully considered in the context of the Commission’s legislative proposals (specifically Recommendation 9). They believe it is inappropriate to invite a federal agency to use rulemaking procedures to reinterpret carefully crafted statutory text. Most importantly, they see it as prejudicial to the other recommendations contained in this report. Others on the Commission expressed concern as well, albeit for different reasons. They would prefer that the issue of eligibility be addressed wholly by Congress in the context of statutory review of Chafee. They believe that a regulatory review by the Library would (by its nature) be limited in scope, would have uncertain results, and might only cause to confuse or detract from Congressional focus.

The Commission recognizes that it is not a court of law tasked with interpreting the scope of a statutory provision as currently codified. It would be wrong to say that Chafee must be interpreted in a particular light simply because certain business practices have evolved among good faith organizations over time. The fact that some read Chafee in a particular way, or believe it should be applied in a particular manner, belies the fact that many read it differently, including rights holders and some representatives of persons who are blind [or have dyslexia] who negotiated the bill in 1996.

Comment: *use of term "dyslexia" requires a factual check.*

Nonetheless, the Commission is tasked with making recommendations to improve accessibility for post-secondary students and believes it reasonable to ask the federal government to exercise the authority it does have by reviewing regulations that may be dated. The Commission observes that the Library of Congress has authority to undertake a review of 36 C.F.R. §701.6 by engaging in a public process, taking into account the current scientific information pertinent to the subject. However, in addition to the issue of what is the proper beneficiary class under the Pratt-Smoot Act, a rulemaking (or, as a preliminary step, a public notice of inquiry) might also consider whether it is reasonable to amend the regulations as suggested absent simultaneous legislative review of the scope and application of the Chafee Amendment.

Recommendation 18: *The Department of Education and the Department of Justice should consider reviewing, clarifying and, as appropriate, conducting a rulemaking concerning the requirements for students to obtain certifications to prove eligibility for accommodations, sometimes on a repetitive basis.*

The Commission understands that some educational institutions, including postsecondary institutions, require students to periodically reestablish their eligibility for accommodations under the ADA, Section 504 and the Chafee Amendment. While the Commission recognizes that documenting or establishing eligibility is a legitimate part of the process to obtain accommodations, the Commission believes that requiring students with long-term disabilities and no near-term prospect of improvement to re-certify on a regular basis poses an undue burden on those students. The cost of certification can be significant and requiring students to incur such expenses on a regular basis, absent any legitimate belief that the outcome will have changed since the last certification, creates an unnecessary barrier to accommodation. Moreover, at least with respect to students with certain learning disabilities, such practices might well be discriminatory.

Comment: *The last line makes intuitive sense but requires specific support.*

Thus, the Commission recommends that the Department of Education and the Department of Justice review and clarify existing practices, and, as appropriate, consider regulatory schemes that may alleviate some of the burden by setting forth standards or requirements that will give postsecondary institutions clarity in their certification obligations.

TECHNOLOGY-RELATED RECOMMENDATIONS

Recommendation 19: *The Commission recommends that publishers facilitate the distribution of AIM by including accessibility in metadata standards.*

When accessible products are created they also need to be easily found by purchasers of instructional materials. There are two ways that publishers can communicate the accessible nature of materials offered for sale.

1. Publishing metadata standards, such as Onix;
2. Creation of VPAT's.

The Commission recommends publishers include accessibility information in metadata standards. Including accessibility information would enable students to find products easily within libraries and bookstores, and would also enable faculty to determine accessibility status of potential syllabus materials. Several commission members raised concerns about how detailed the metadata would be, who would assign the metadata and who would validate the metadata. Other members noted that creating and maintaining metadata can be an expensive operation – especially if done retroactively. In addition, institutions must educate users of the data so that the limitations of the data are understood. In sum, Many on the Commission feel that the proposal would, in the long term, resolve the problems we currently have with access to published information.

It has also been expressed that a voluntary approach, without a statutory requirement, would not solve the problem and that universities and students could not depend on the information being accessible, i.e. the statute approach will result in the most dependable outcomes. Though, it should be noted that some members of the commission prefer to have a voluntary approach to this issue.

EdiTeur, an international data standards body for the book industry, is currently spearheading an accessibility metadata initiative that may be relevant to this effort. At a minimum, the Technology Task Force finds appropriate standards should include:

- Title and Author data
- ISBN
- Accessibility metadata on the format, so that the user can distinguish among Braille hardcopy, digital Braille files, human narrated audio, large print, digital text (such as DAISY, EPUB) [Who is going to create and keep up the metadata on multiple available formats and at what cost?] (BH)
- Purchase, free or membership access
- Geographic limitations, if any
- Other options that can be considered as part of a minimum or optional set:
 - Keywords
 - Subject/category

Recommendation 20: *The establishment of a federated search entity that enables individual students and DSS office to search a single online resource to locate pre-existing accessible sources.*

Comment: *This recommendation needs to be expanded with added detail.*

Currently, there is no universal national network for DSS offices and entities that create accessible materials for students with disabilities to share accessible materials. The creation of a federated search would allow authorized users the ability to post accessible texts for DSS coordinators and other authorized users to access. The establishment of a federated search of this type would make accessible instructional materials more widely available for DSS Coordinators to distribute to authorized students with disabilities.

Recommendation 21: *Consideration should be given to increasing government support for the creation of braille and tactile graphics materials in postsecondary settings*

Comment: *Commission needs to strengthen the recommendation. If the commission recommends additional government funding, then should be so stated. "Consideration" doesn't mean anything...*

There are only a limited number of duplicate requests for a huge volume of materials used in post-secondary settings; and demand is not sufficient to support prospective creation of accessible editions of most post-secondary titles, given current production technologies. Creating braille and tactile graphic versions of STEM and foreign language materials are the most time-consuming and costly materials to produce. For example, it is not uncommon for a single math braille version created from a print textbook to cost in the \$50,000 to \$120,000 range. (CITE). Costs are magnified by the specialized skills required, the fact that a two-year old version of the book may not be the most recent one, or that no math braille version was ever previously created.

The Commission believes that, at least for the foreseeable future, the production of braille and tactile graphics will fall outside the scope of the current commercial market. The Commission believes that the high production costs combined with the limited demand for or duplication of these materials, especially when the source format is "legacy print" [need to define], will continue to require government support.

Commercial publishers often receive a large number of uninformed or short notice requests in peak periods, like the weeks immediately preceding a semester start. Challenges regarding permissions exist due to the variety of copyrights within a textbook. Often there are a number of versions and variations of single title, and older works lack digital files. Publishers may experience increased production costs when fulfilling

requests outside their normal business model, and there are significant additional costs and difficulty of producing accessible STEM content on request, either for commercial content providers or for third party accessible media producers. Additionally, small publishers often lack knowledge about the possible formats or lack of knowledge of how to create accessible content.

Recommendation 22: *The Commission recommends that producers of courseware management systems, Web development software, word processors, and layout programs, among others, be encouraged to create accessibility wizards and prompts that inspect materials for accessibility as they are created and before they are distributed to students.*

If popular authoring tools could be employed more efficiently and effectively by course materials producers, the incremental costs of production could be reduced significantly, thereby reducing barriers to the availability of accessible materials.

MODEL PROGRAMS

Recommendation 23: *The Task Force recommends that a demonstration project to a major post-secondary institution engaged in implementing a campus-wide approach to accessibility be competed*

This demonstration project would highlight the tools and techniques found by the university to be effective. In addition, this project could address what works, what has not worked, and other barriers and issues. The Task Force envisions that this would include creating templates for how accessibility may be built into the administrative structure: sample language for purchasing; for RFPs and contracts; faculty guidelines, and other resources that could evolve into "models" to be disseminated.

Comment: <i>Should funding requests be combined?</i>

Recommendation 24: *The Commission recommends for the Department of Education to offer a discretionary grant opportunity to fund a demonstration project for STEM faculty*

Since STEM disciplines provide special challenges to accessibility because of the highly technical nature of course materials and the prevalence of “hands on” activities, the Task Force recommend partnering with prominent science, math, and engineering professional organizations (e.g. American Chemical Society, American Physics Society, American Society for Engineering Education, Mathematical Association of America) and NSF RDE (Research in Disabilities Education) to fund a demonstration project focusing on professional development for STEM faculty to increase their awareness and expertise around increasing accessibility for students with disabilities at graduate and undergraduate levels.

Recommendation 25: *The Task Force recommends funding a Model Demonstration Instructional Program in Tactile Graphics and Braille Development*

The Commission recommends that this project establish a scalable, on-line program for instruction in reading tactile graphics and braille